

Fig. 1

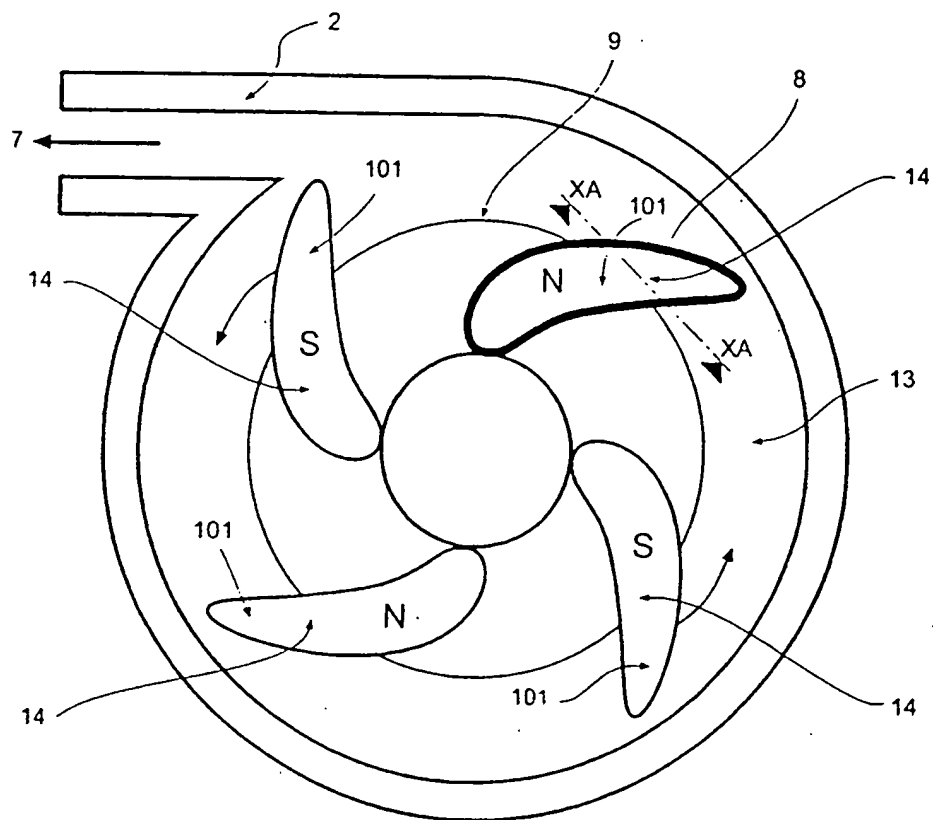


Fig. 2

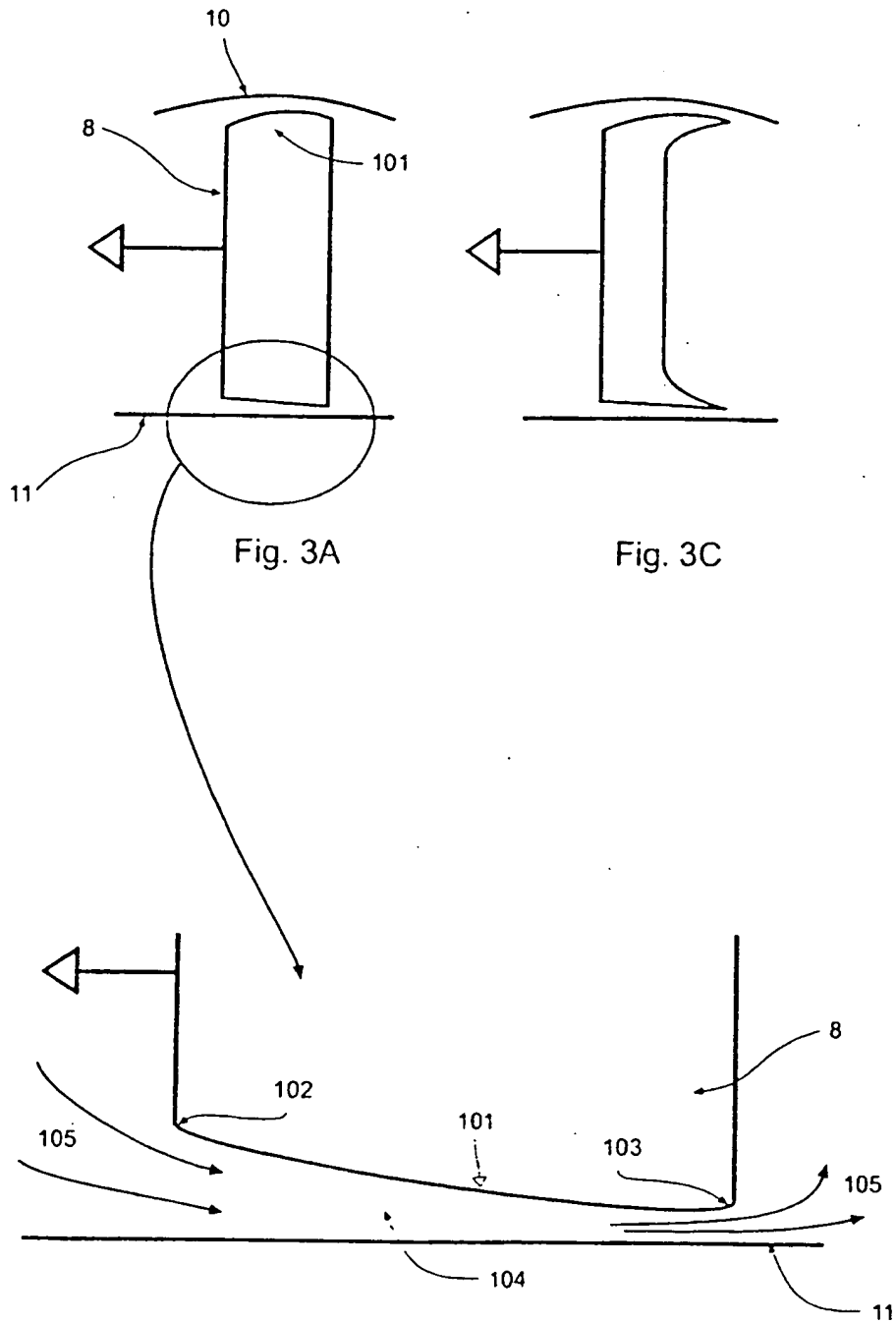
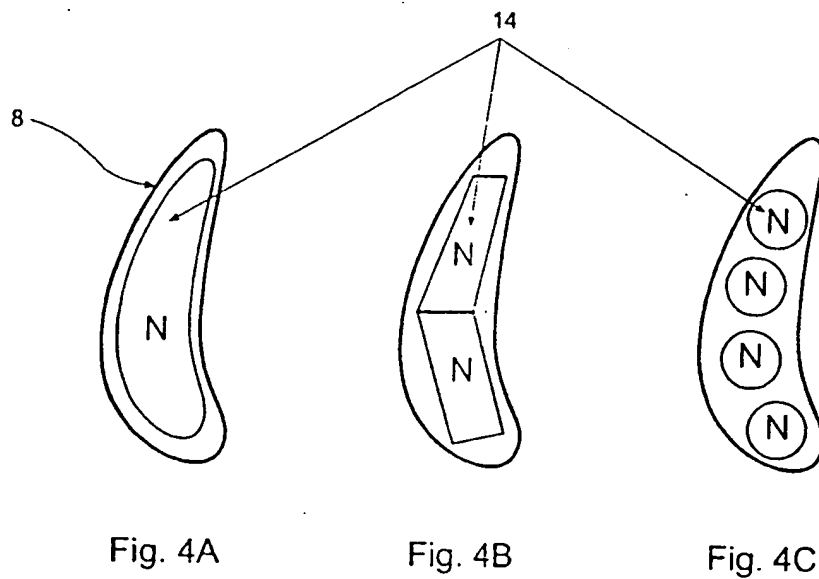


Fig. 3B



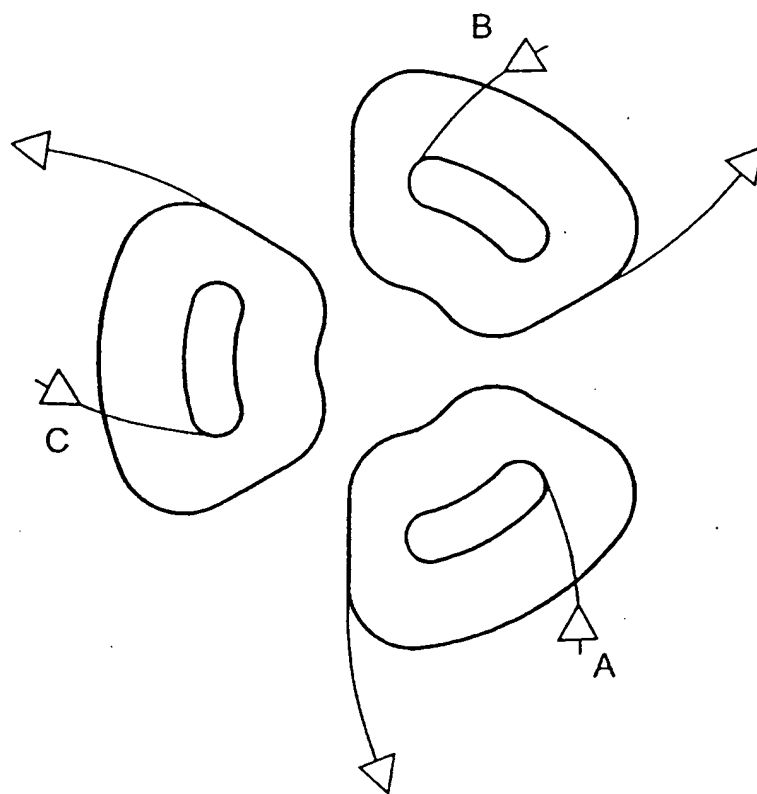


Fig. 5A

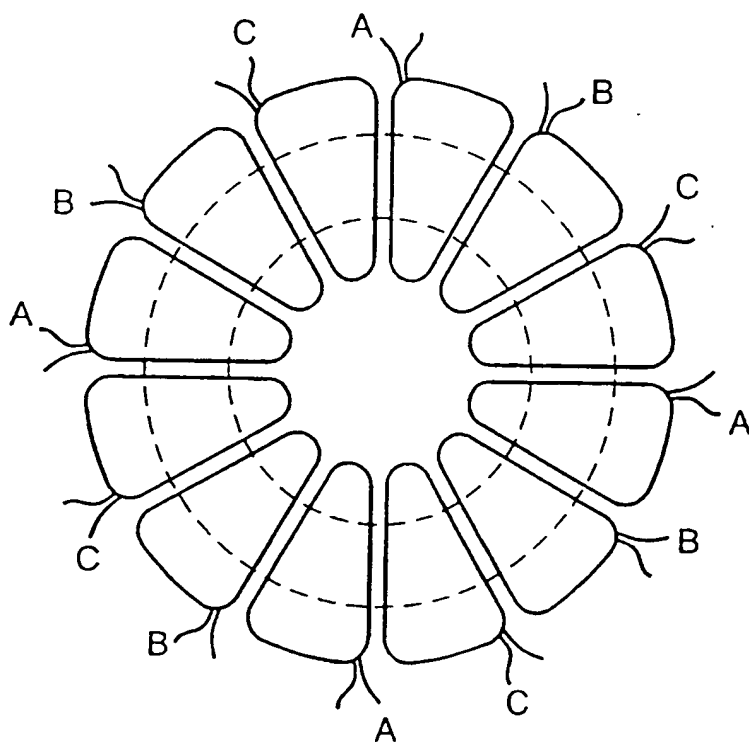


Fig. 5B

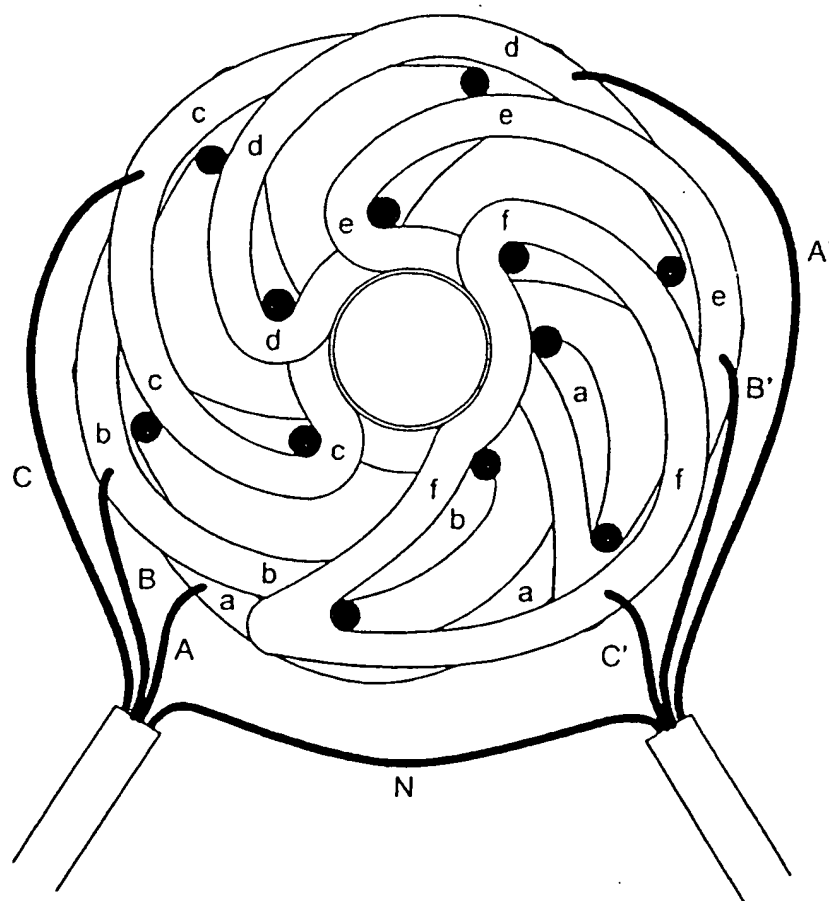


Fig. 5C

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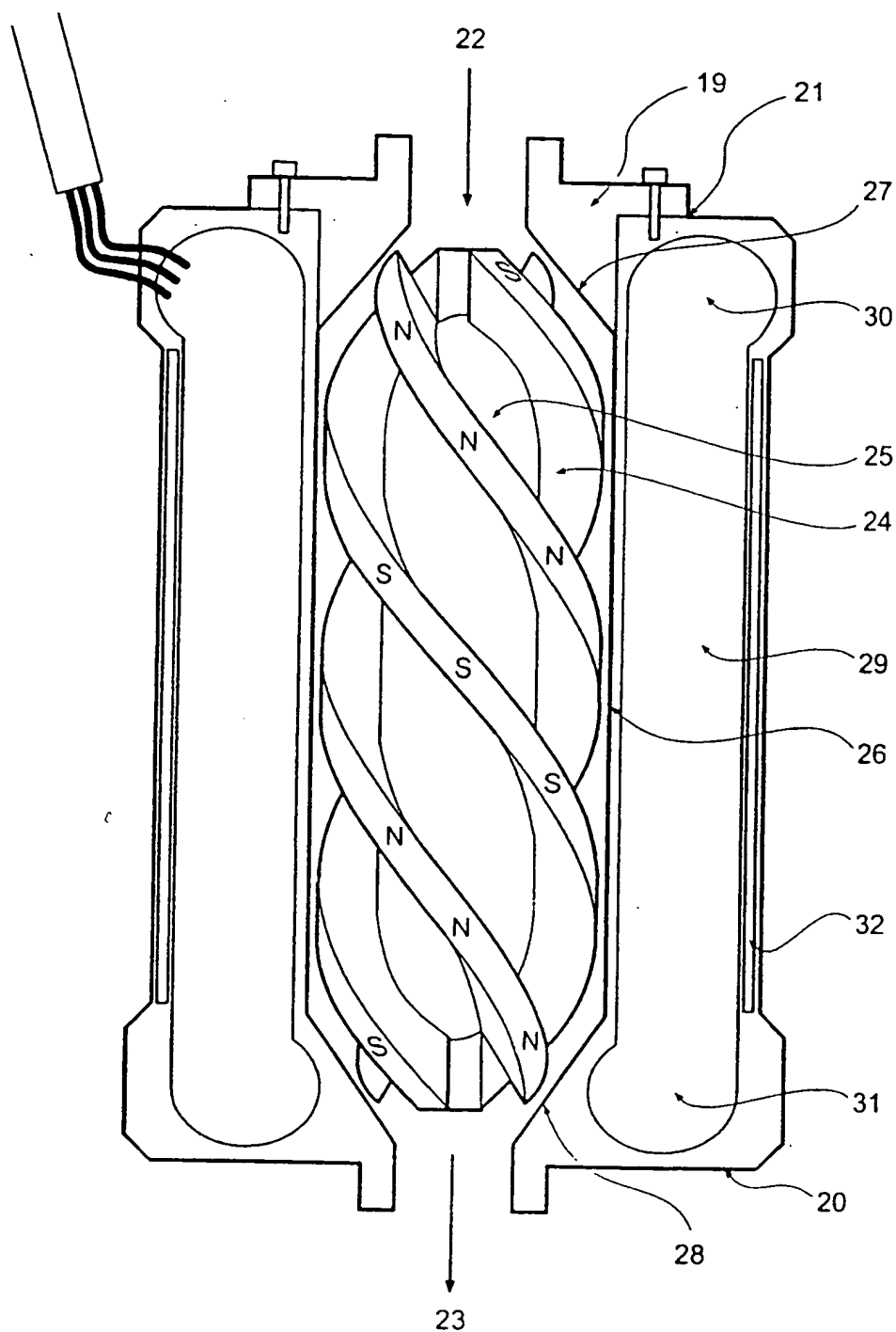


Fig. 6

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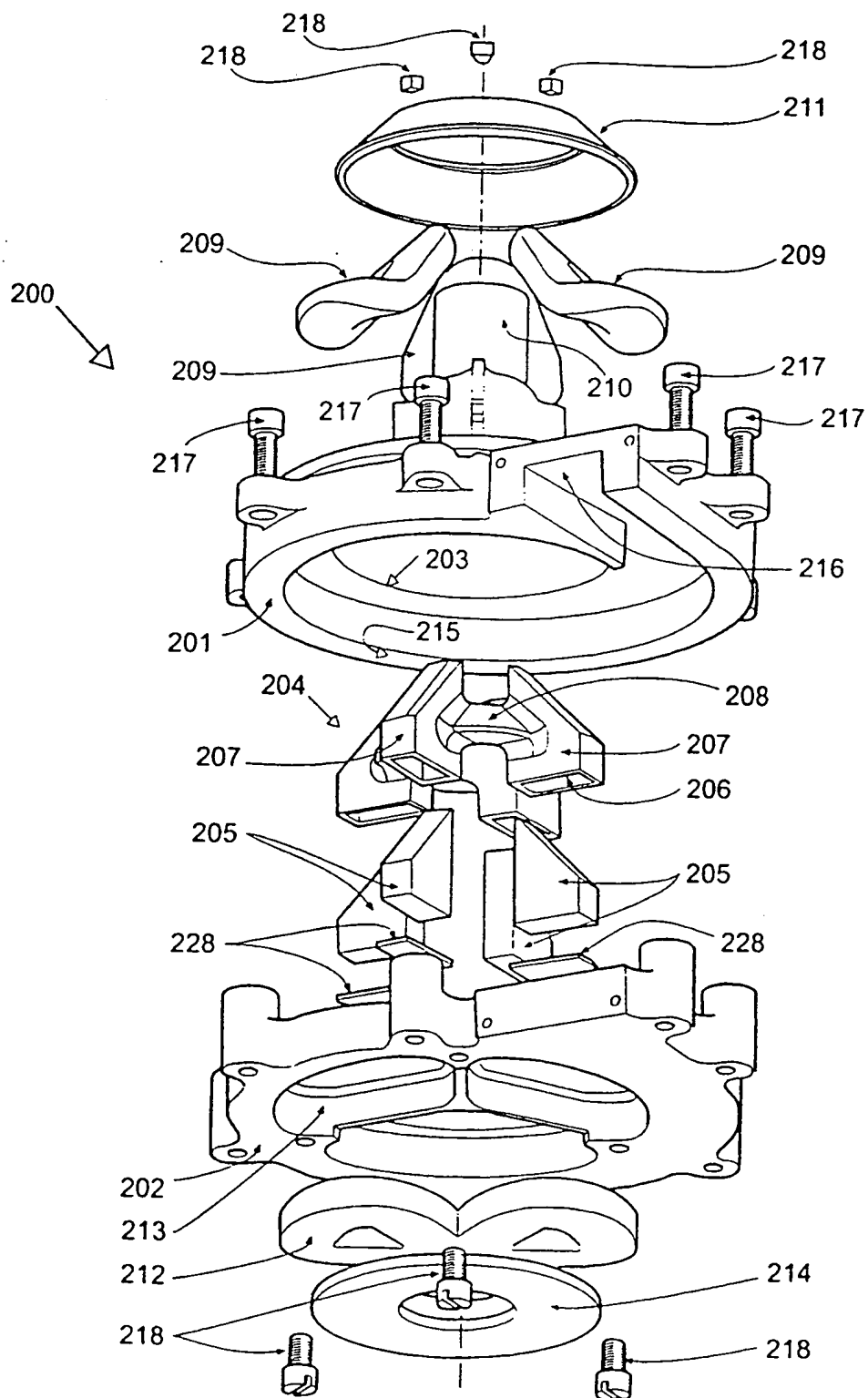


Fig. 7

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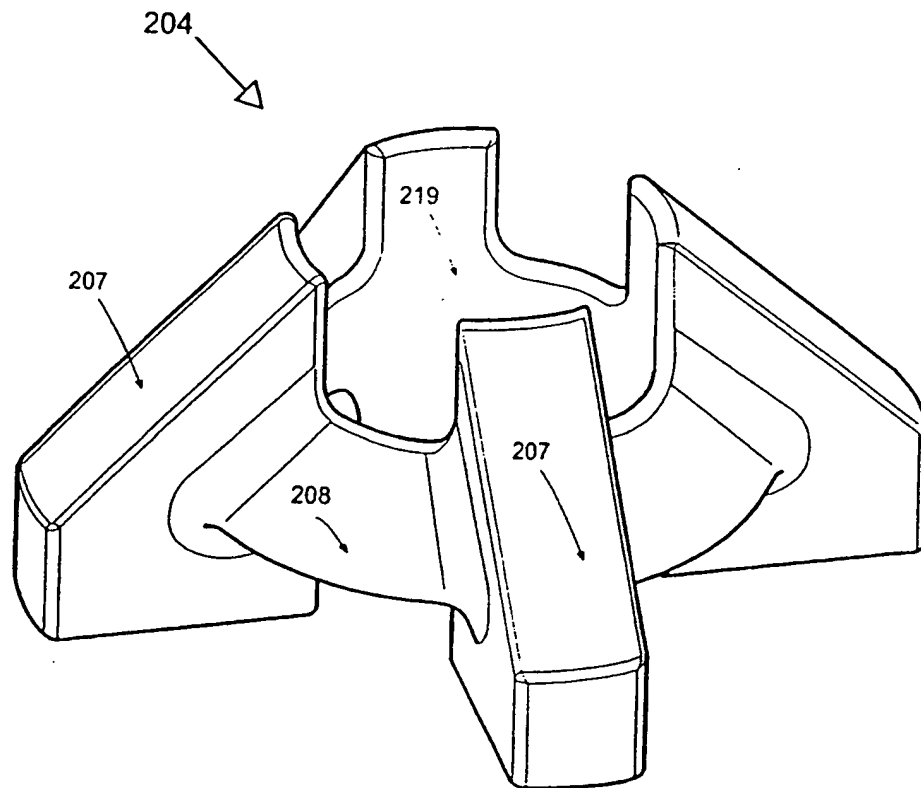


Fig. 8

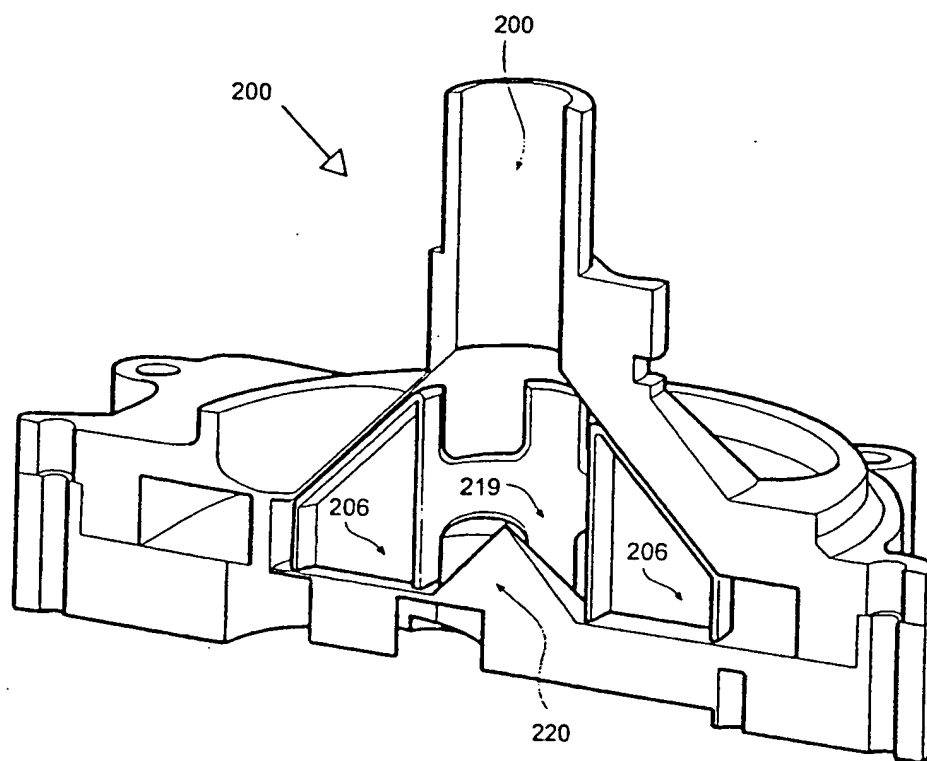


Fig. 9

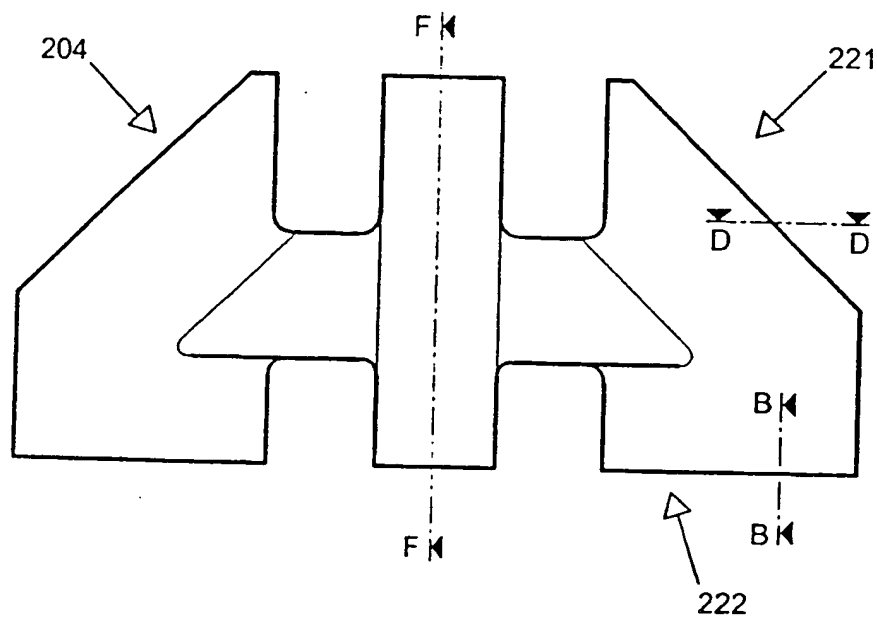
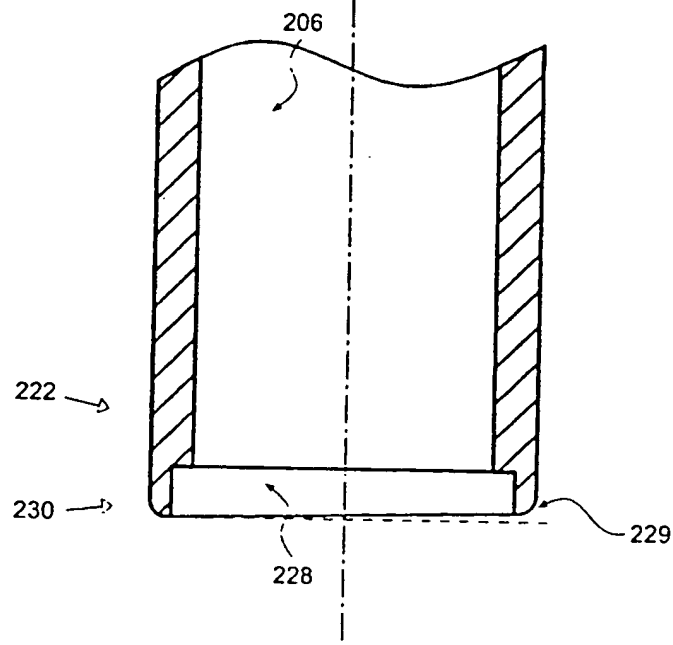
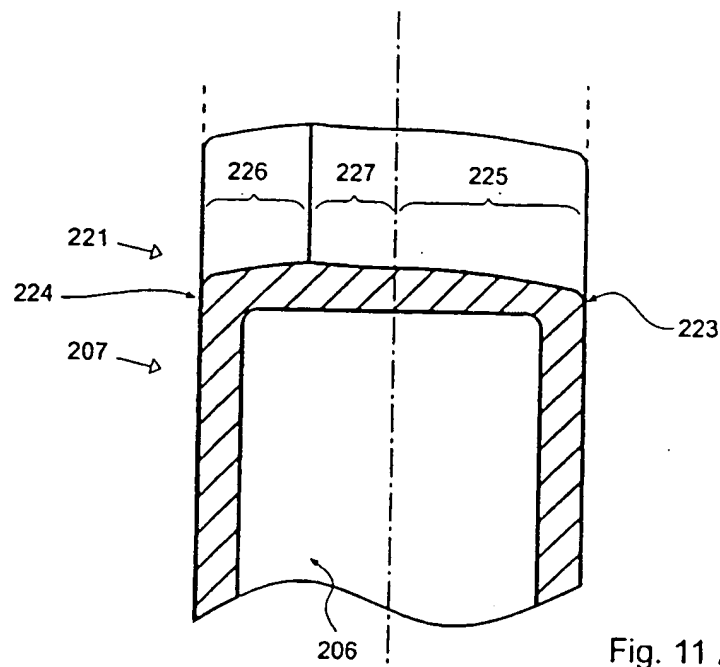


Fig. 10

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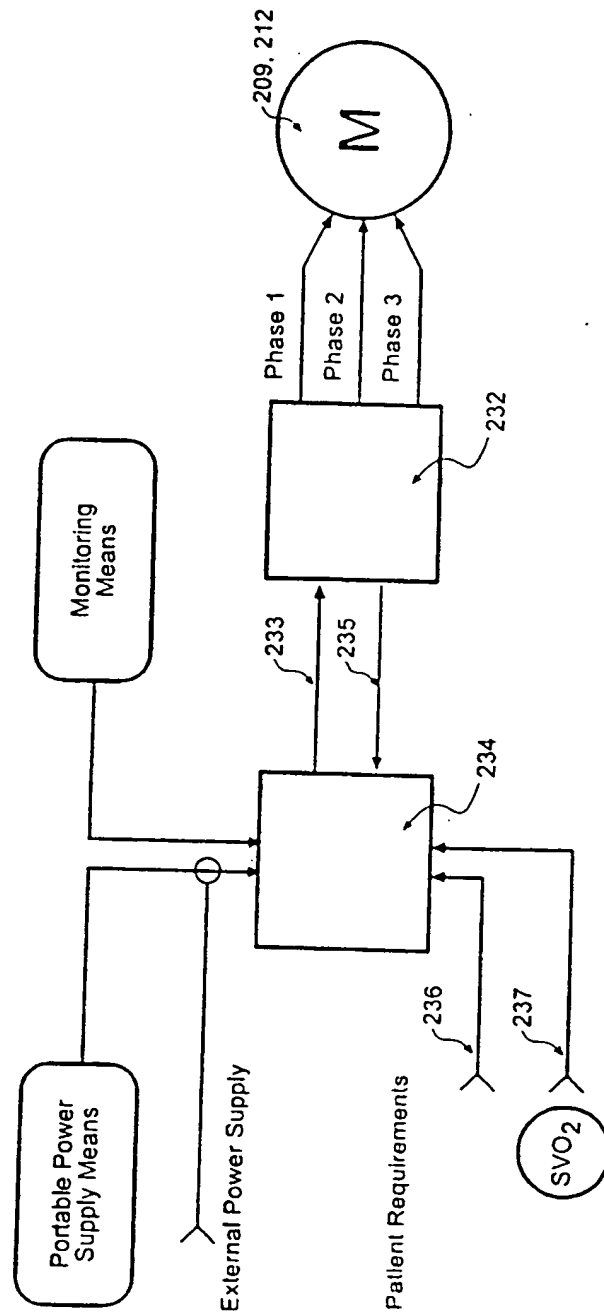


Fig. 12

VA-A1 V1 HQ Curves In 18% Glycerol

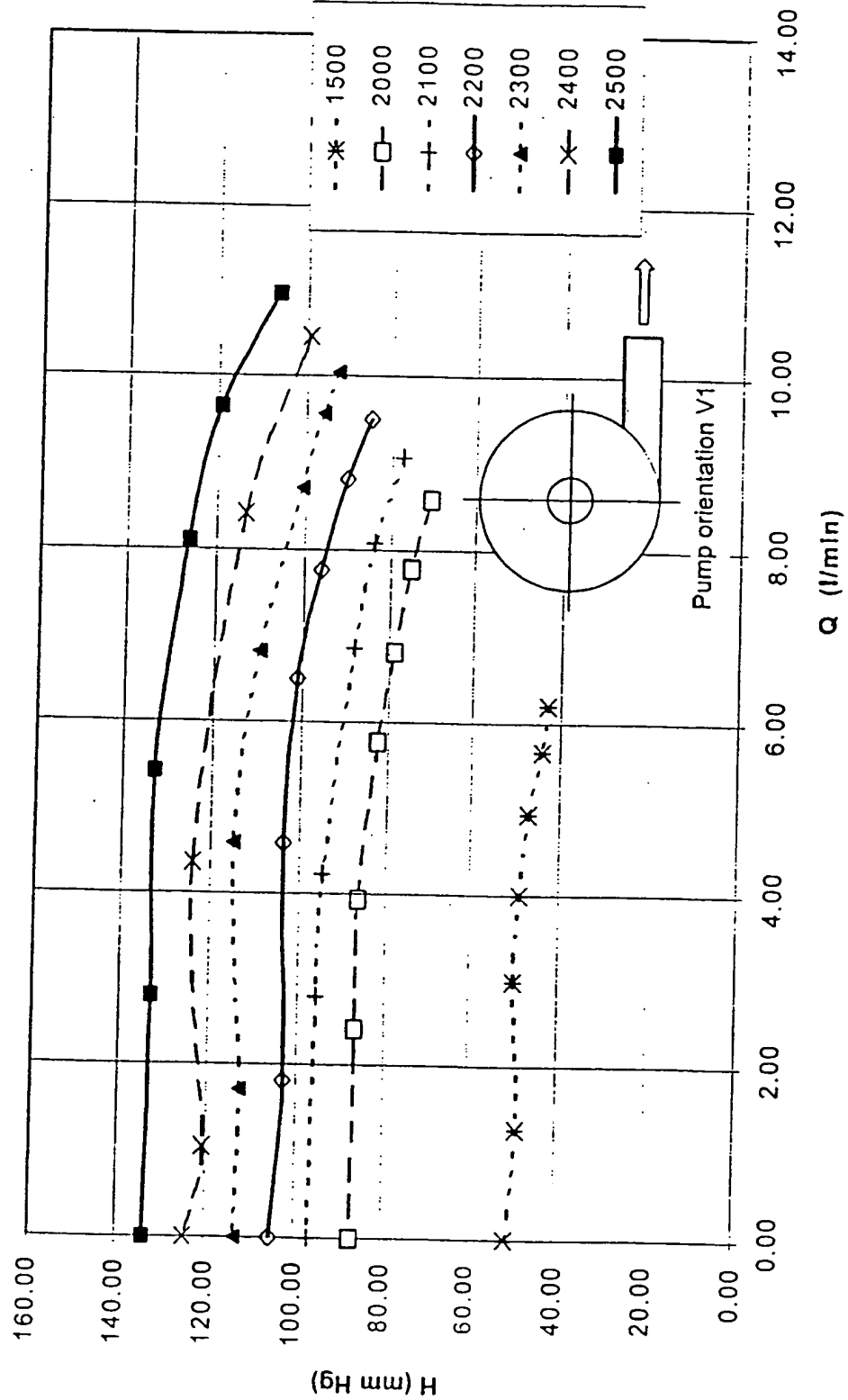


Fig. 13

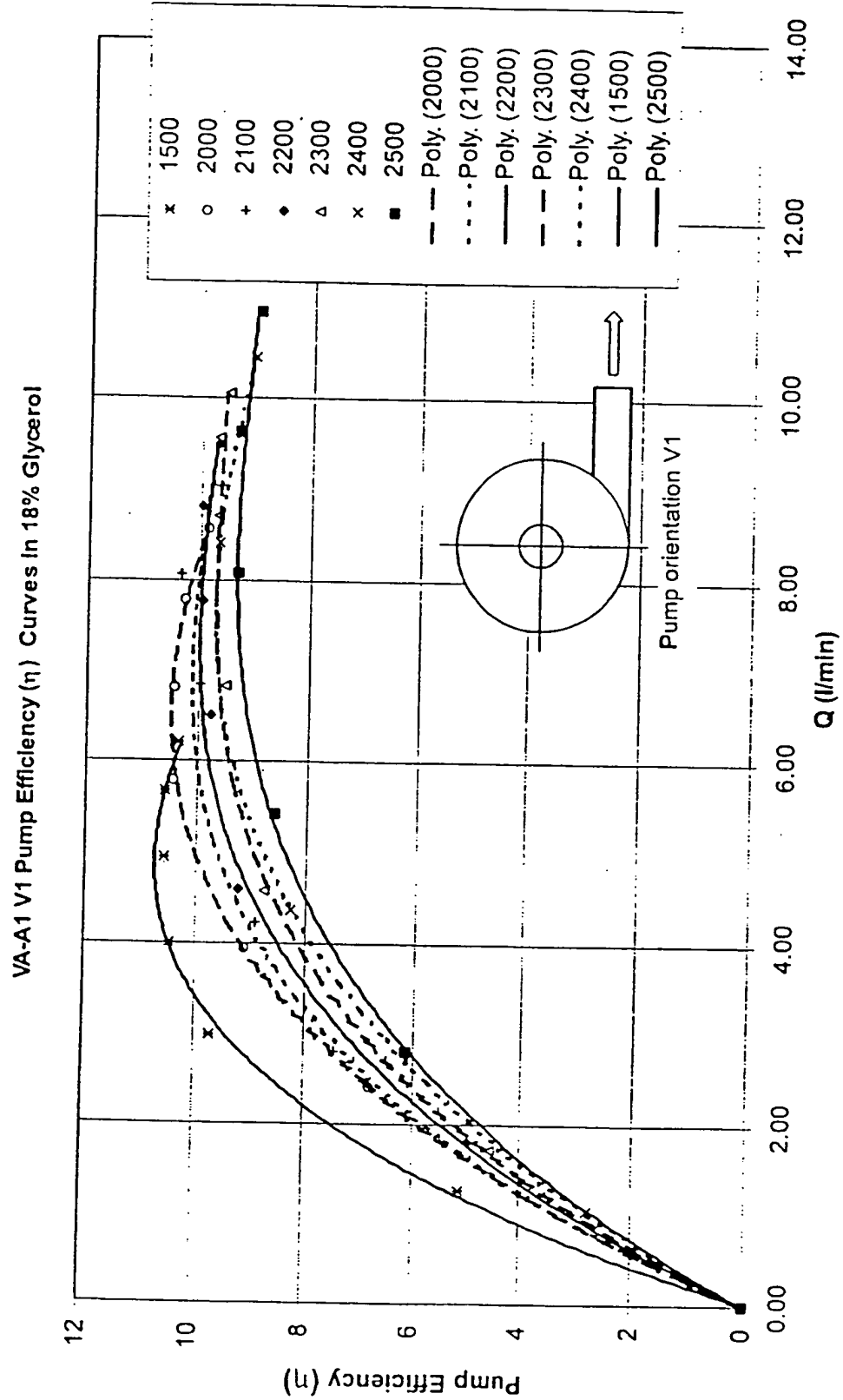


Fig. 14

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VA-A1 V1 Electrical Power vs Flow Rate Curves in 18% Glycerol

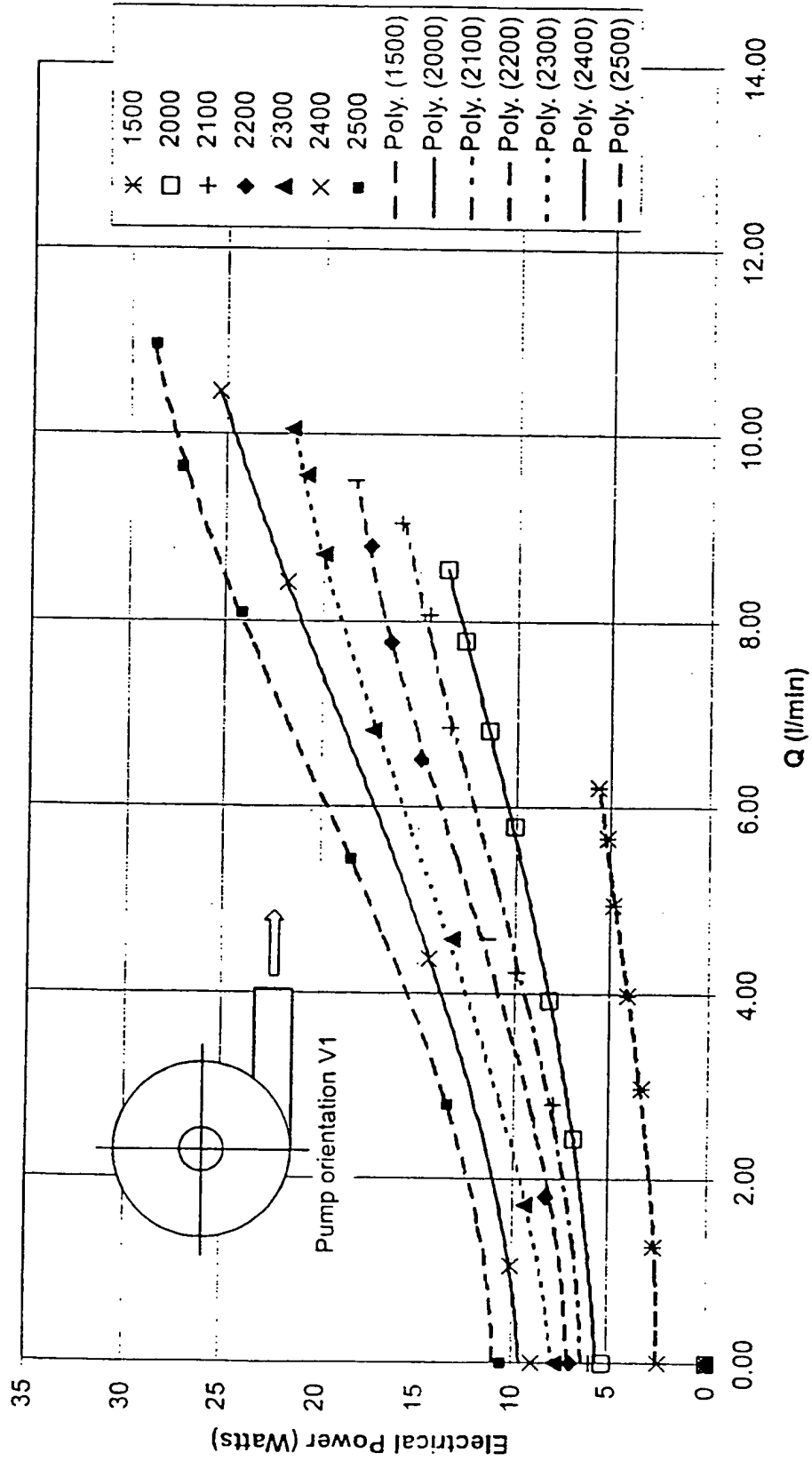


Fig. 15

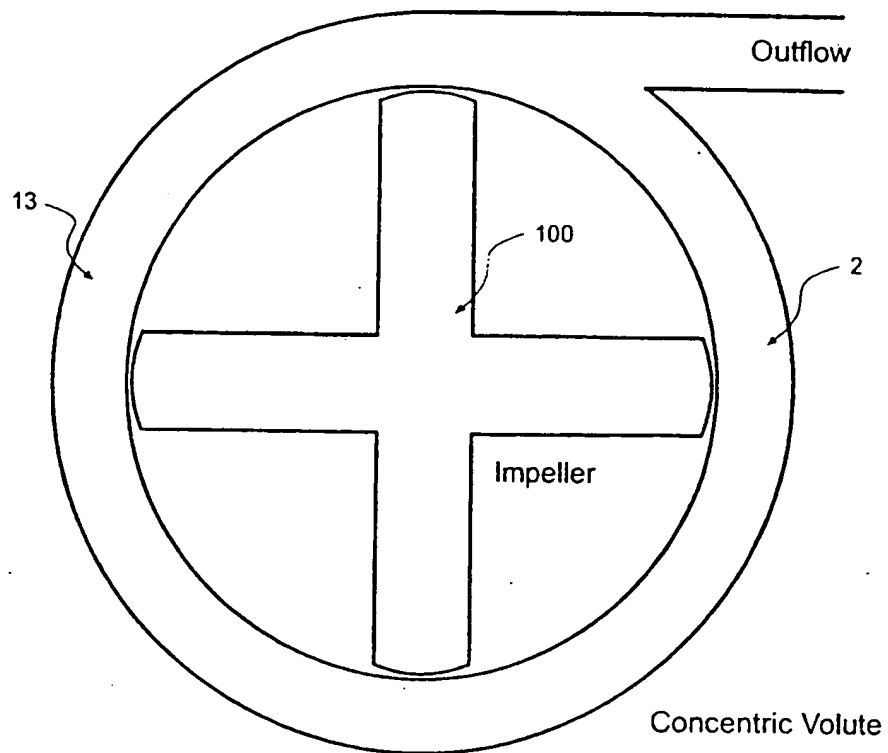


Fig. 16

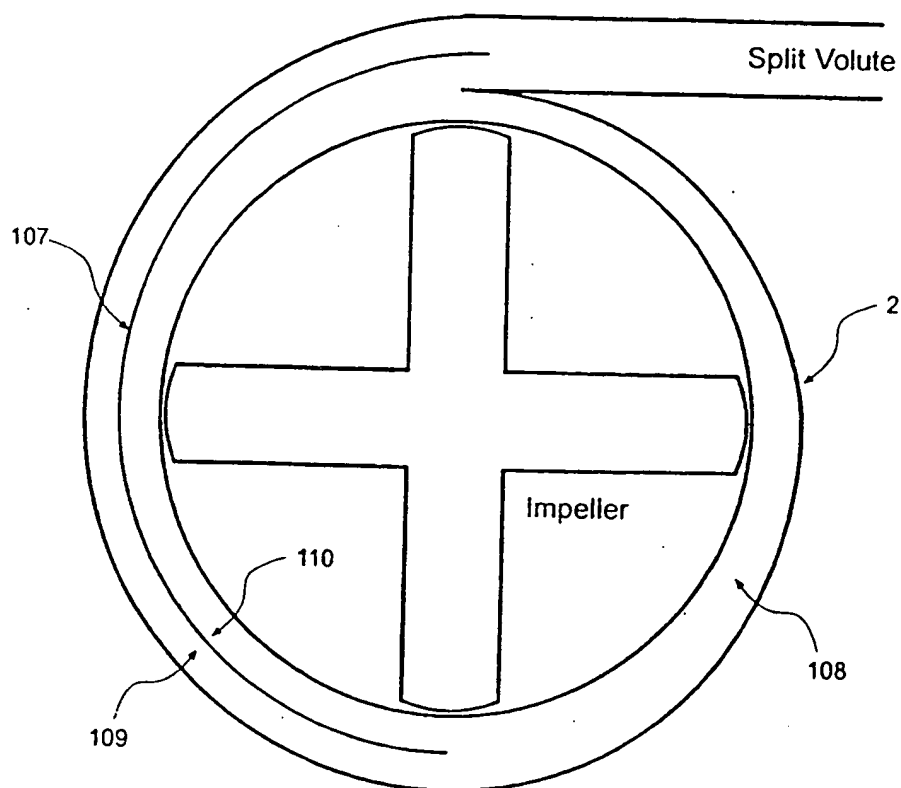


Fig. 17

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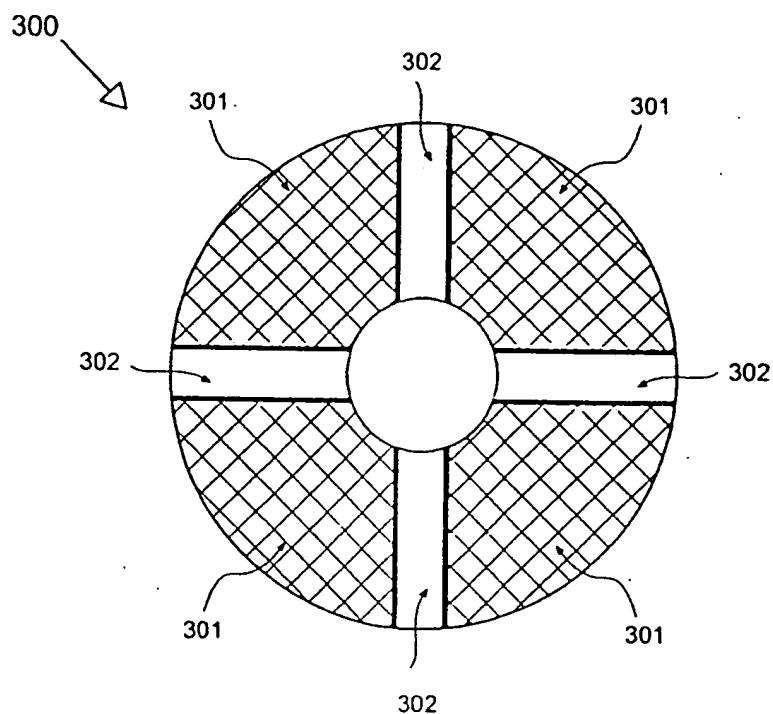


Fig. 18

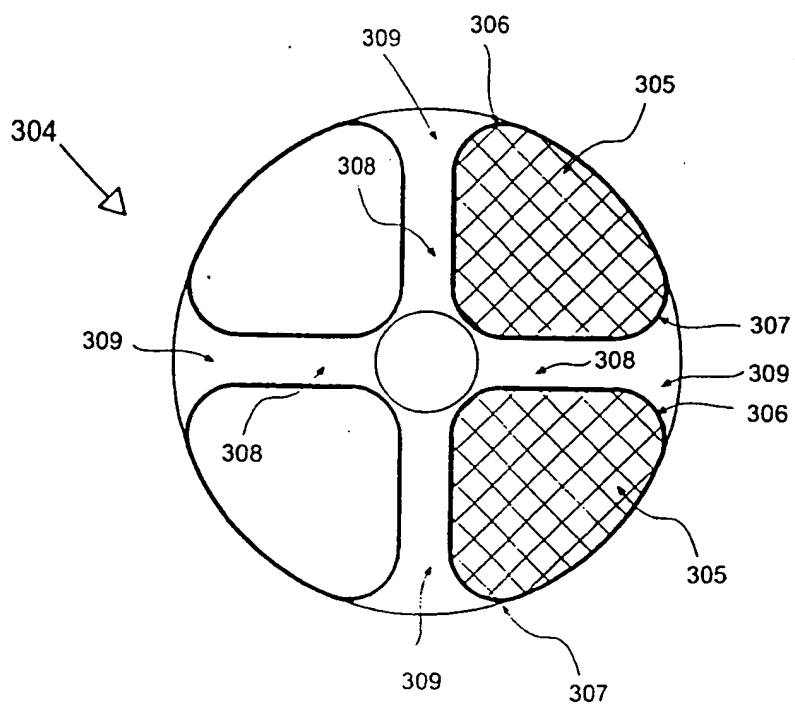


Fig. 19

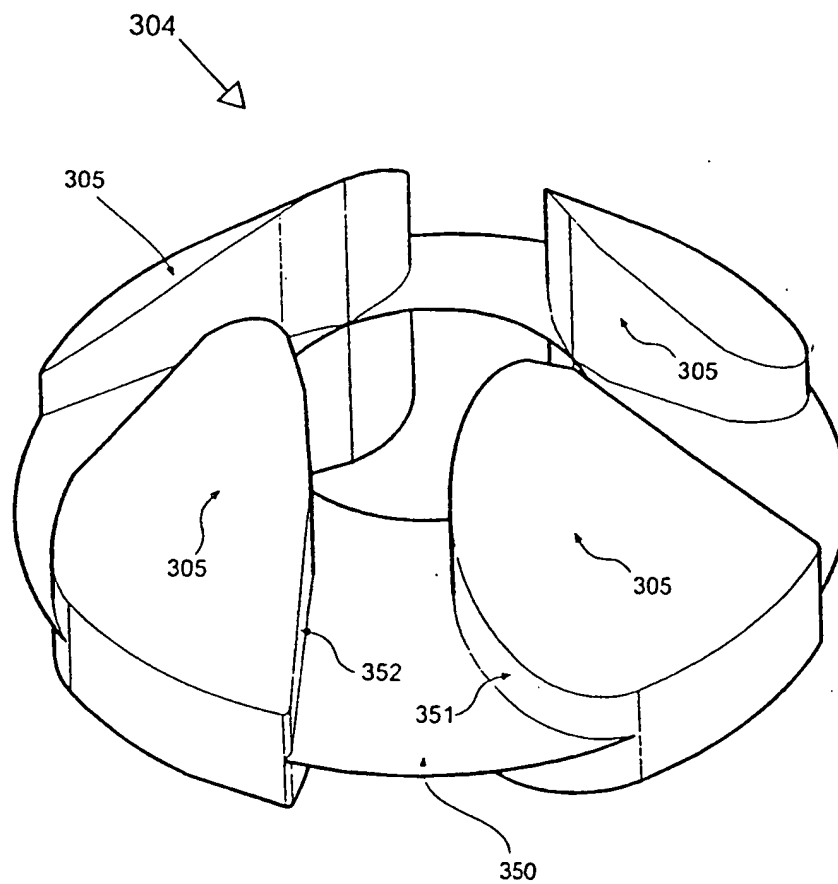


Fig. 20

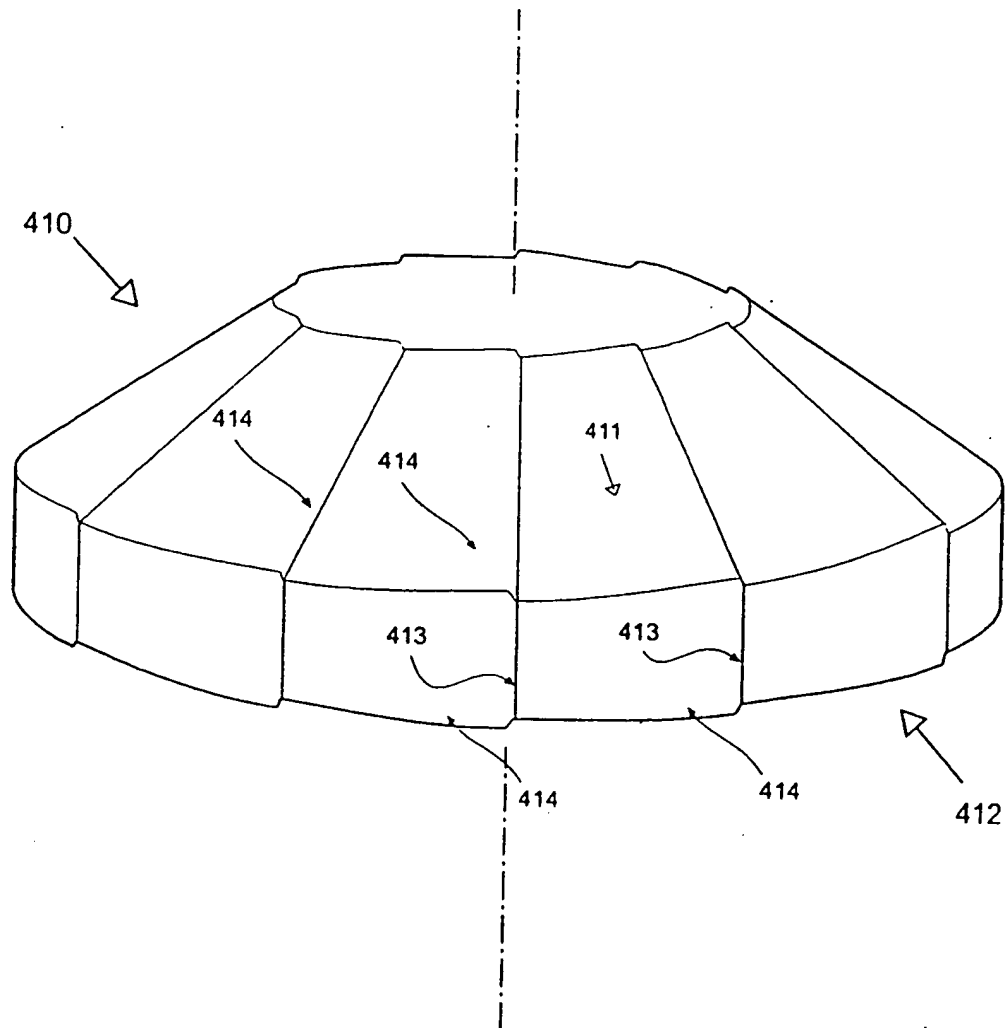


Fig. 21

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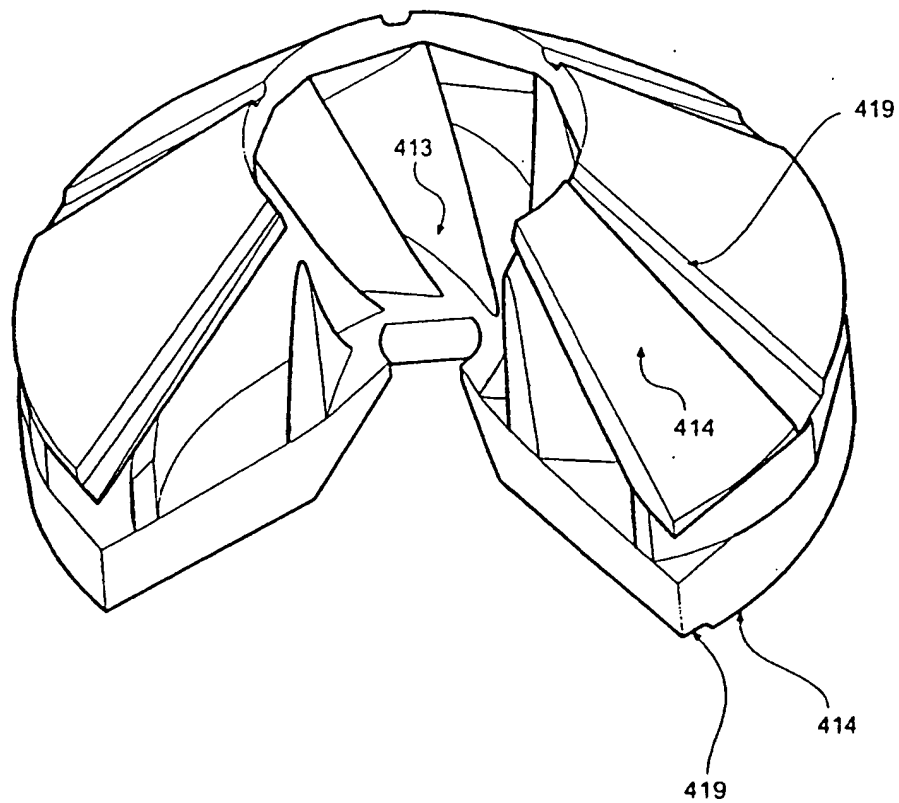


Fig. 22

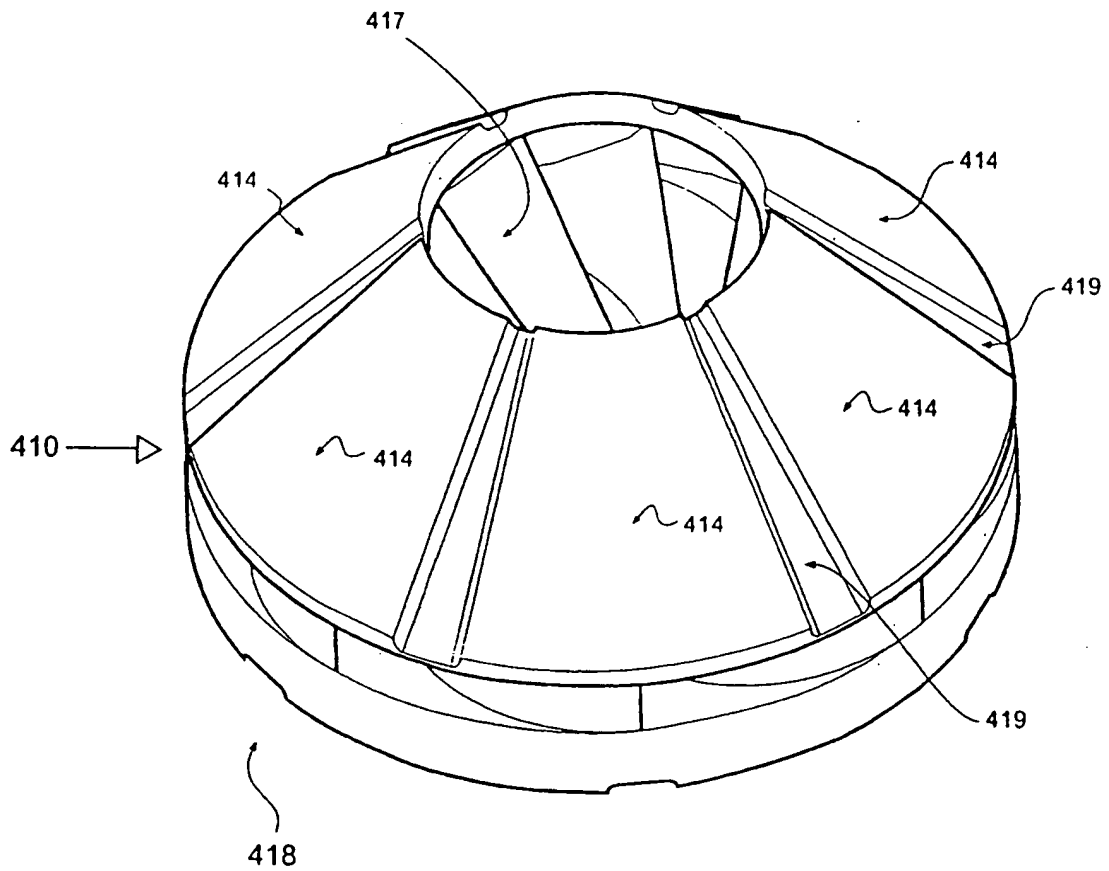


Fig. 23

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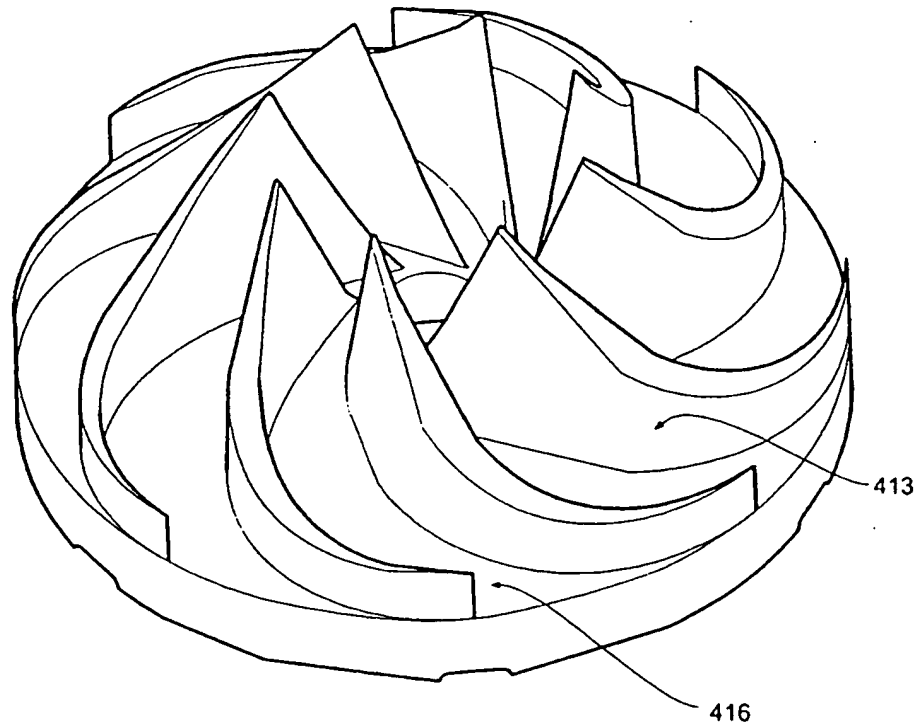


Fig. 24

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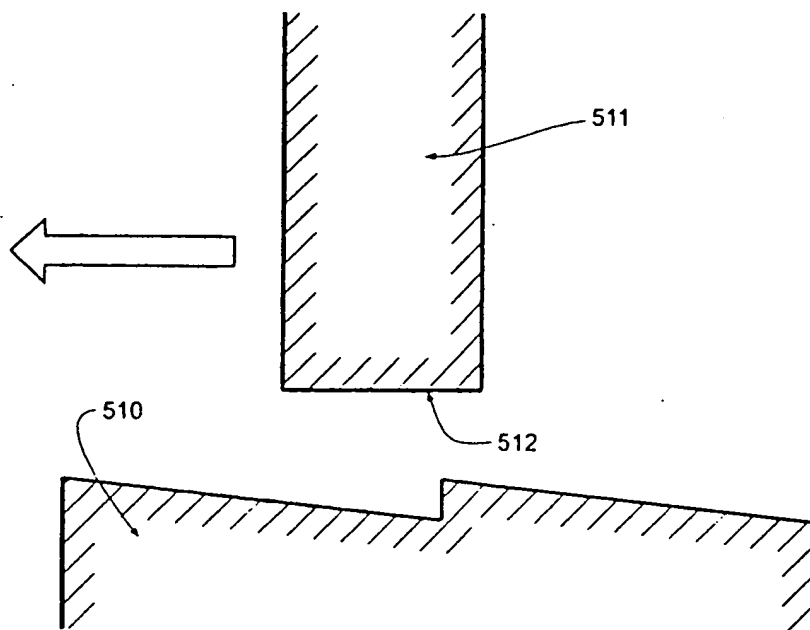


Fig. 25

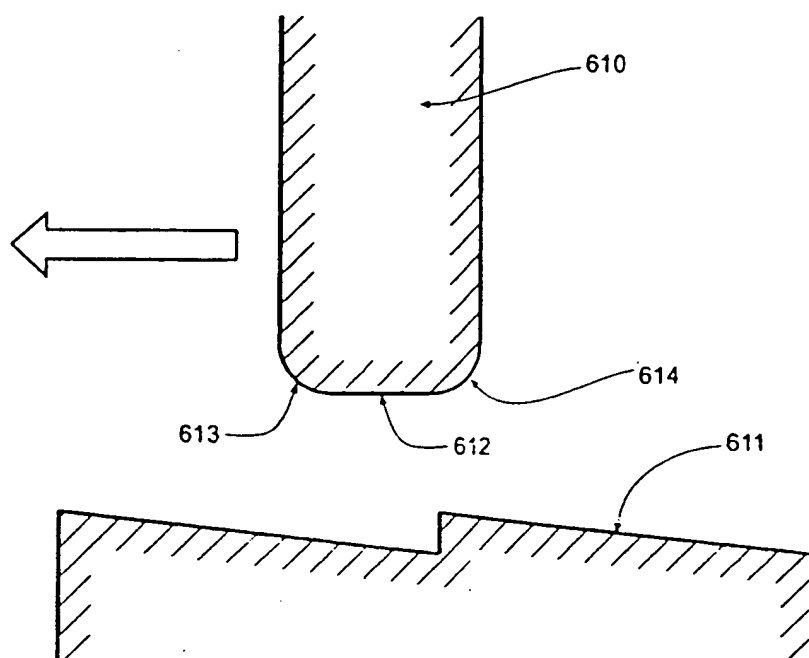
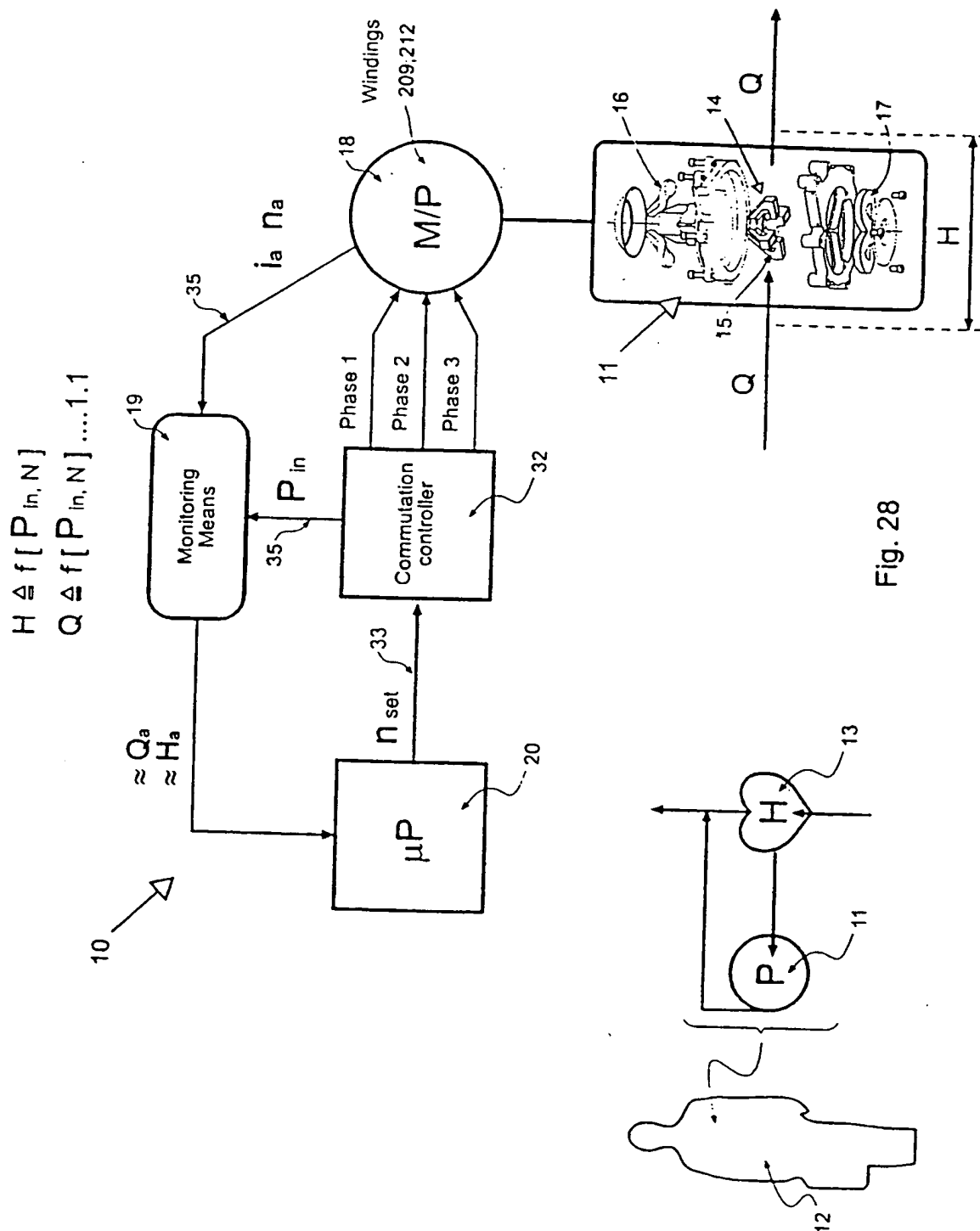


Fig. 26





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Flow prediction VA.AB 1.2 Acrylic Unit 2, 6% saline + blood (Hct 32.5%)

$$Q = 20.287603 + 4.731983 \ln(P_{in}) - 0.54863188 \sqrt{n}$$

Q = Flow (l/min)
Pin = Power In (Watts)
n = Motor speed (rpm)

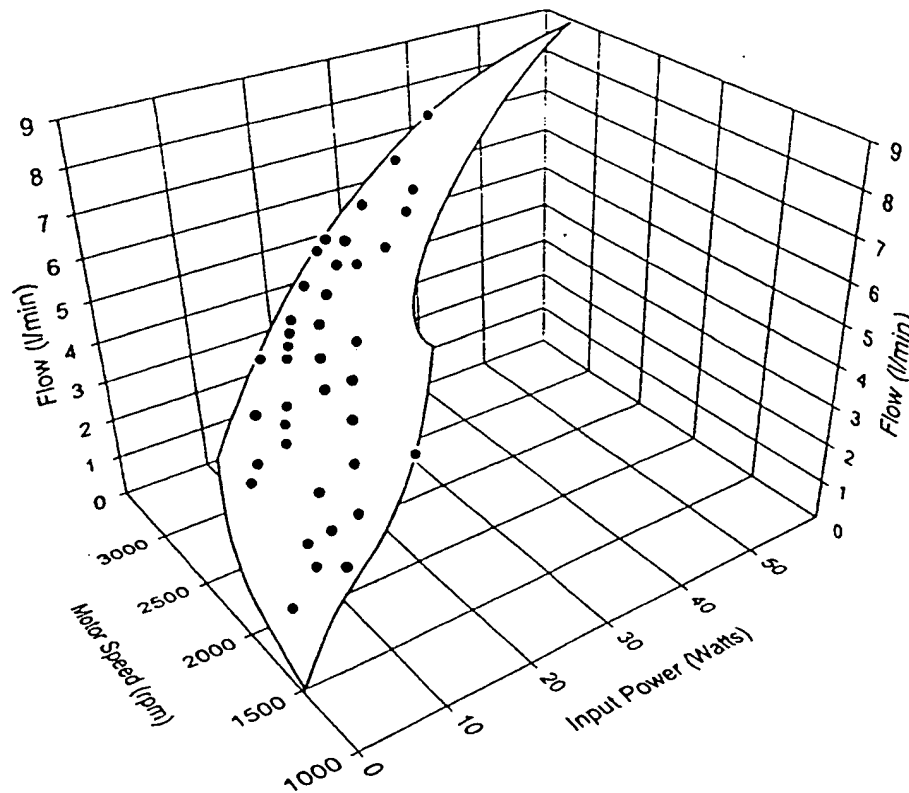
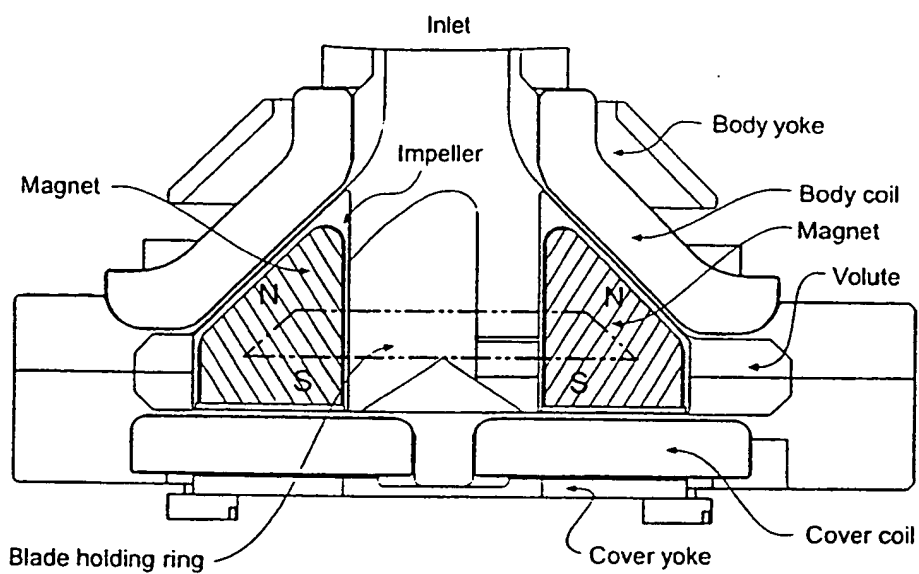


Fig. 29

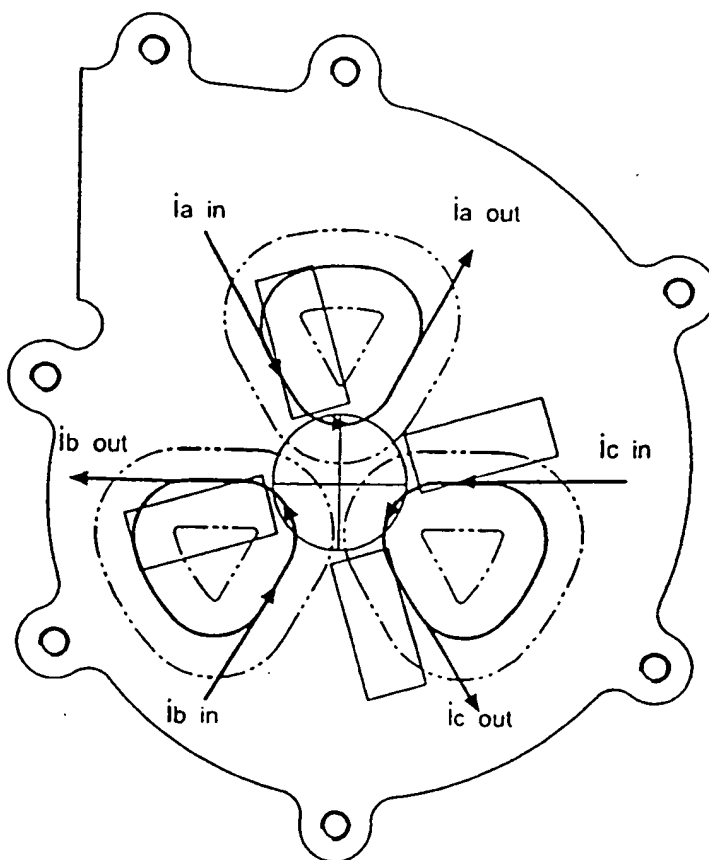
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Sketch of the pump cross-section.

Fig. 30

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Cover coil superimposed by rectangular magnets.

Fig. 31

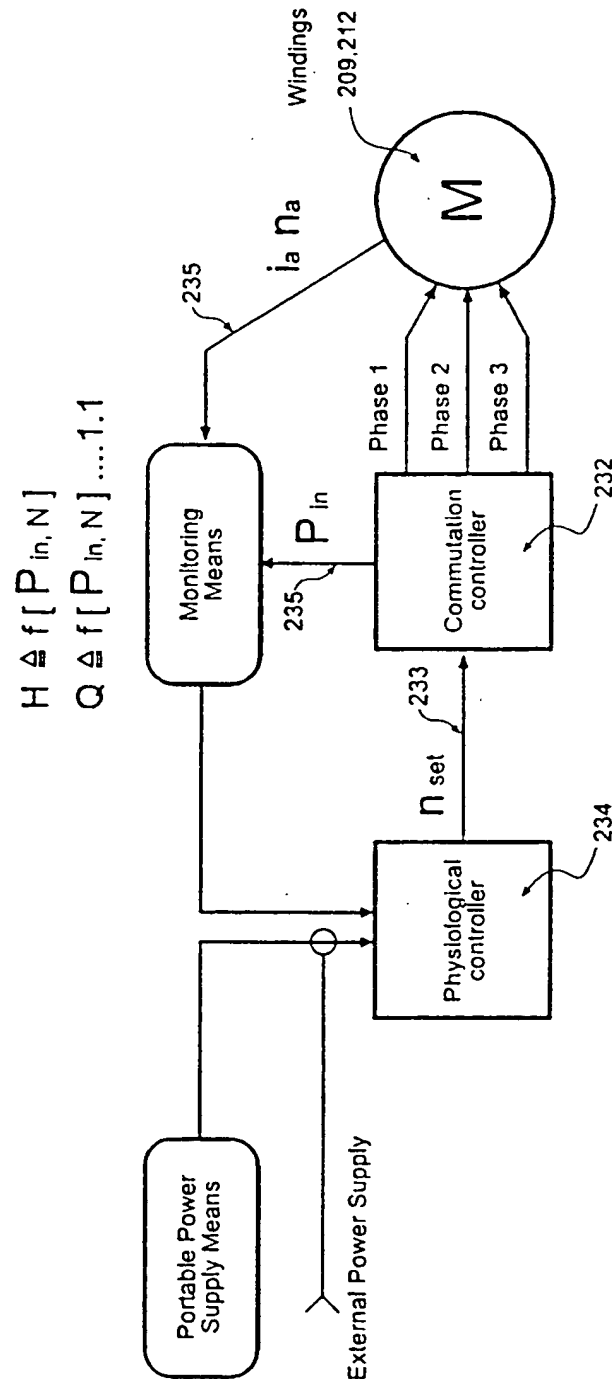


Fig. 32

CENTRIFUGAL AND AXIAL FLOW PUMPS

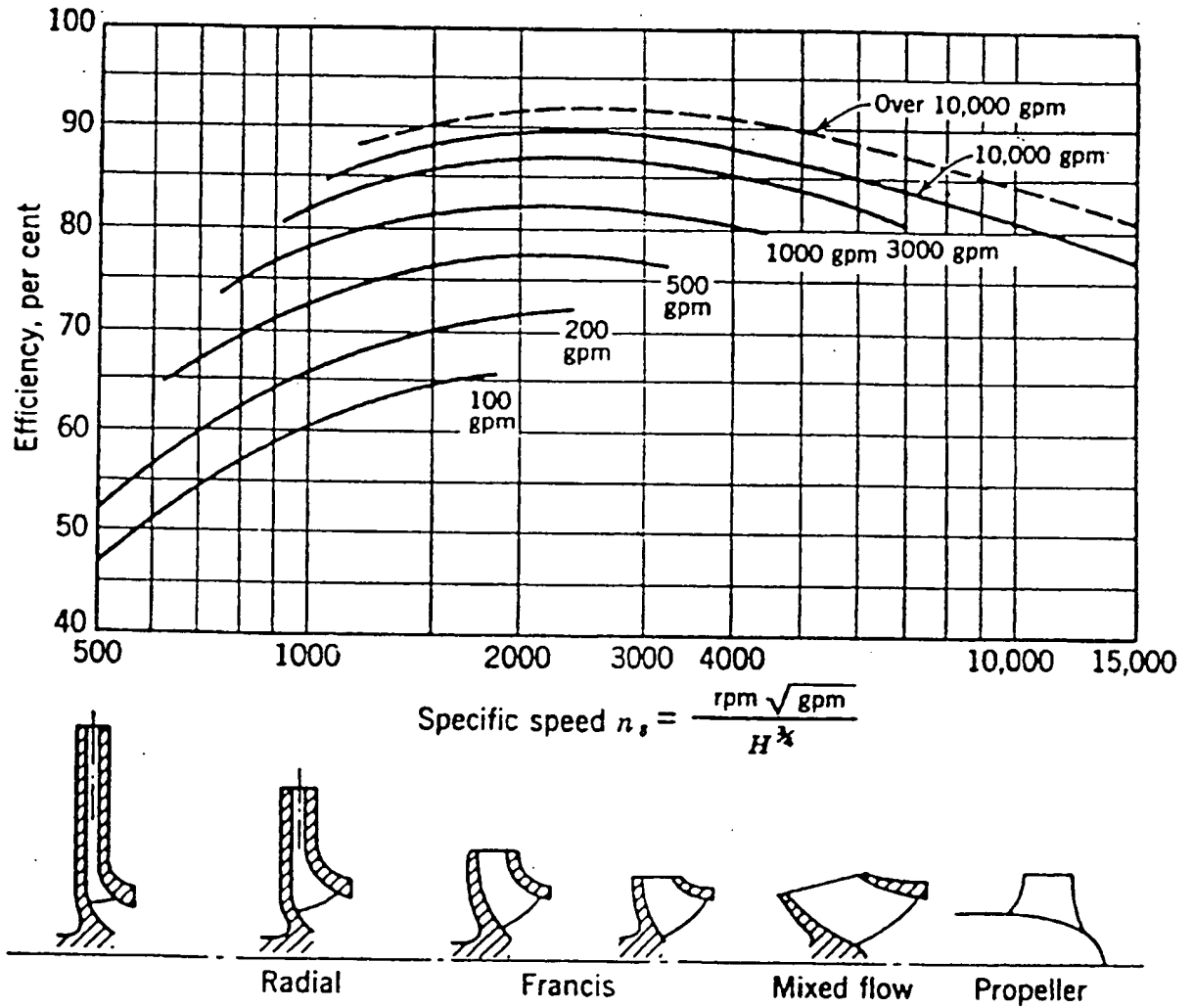
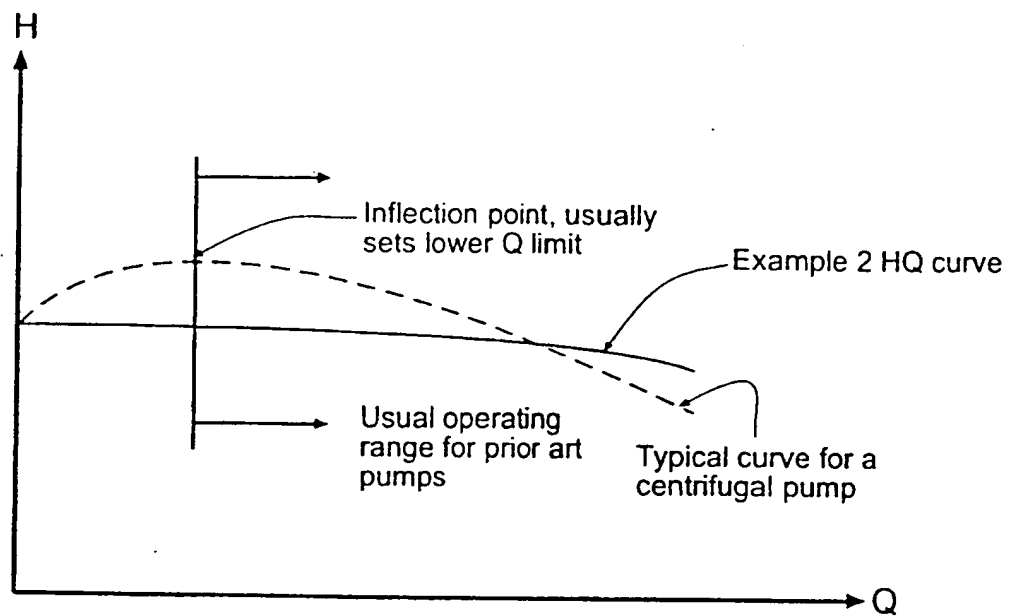


FIG. 5.1. Pump efficiency versus specific speed and pump size (Worthington).

Source: From Stepanoff, A.J. 1993. "Centrifugal and Axial Flow Pumps" (2nd Edition), Krieger Publishing Co. FL. USA.



HQ curves for the pump and a typical centrifugal pump which exhibits a peak in the HQ curve.

Fig. 34

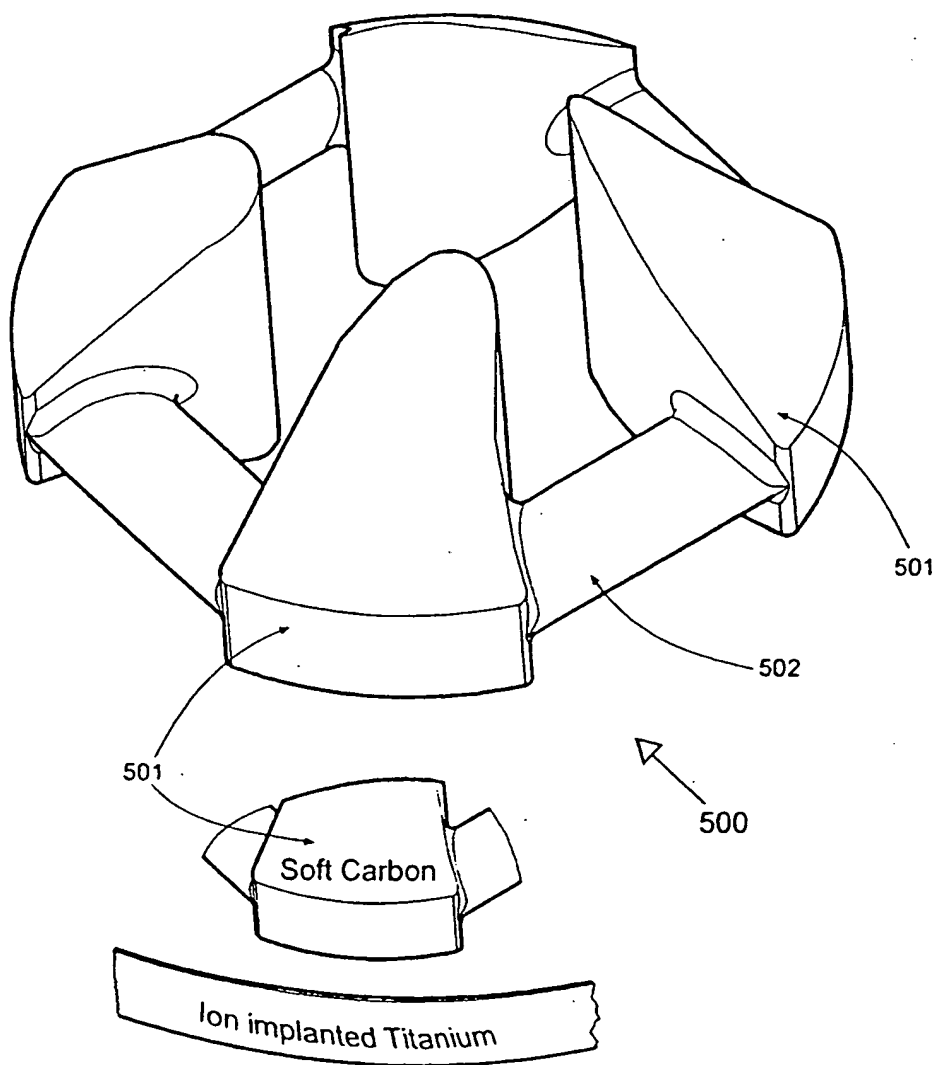


Fig. 35

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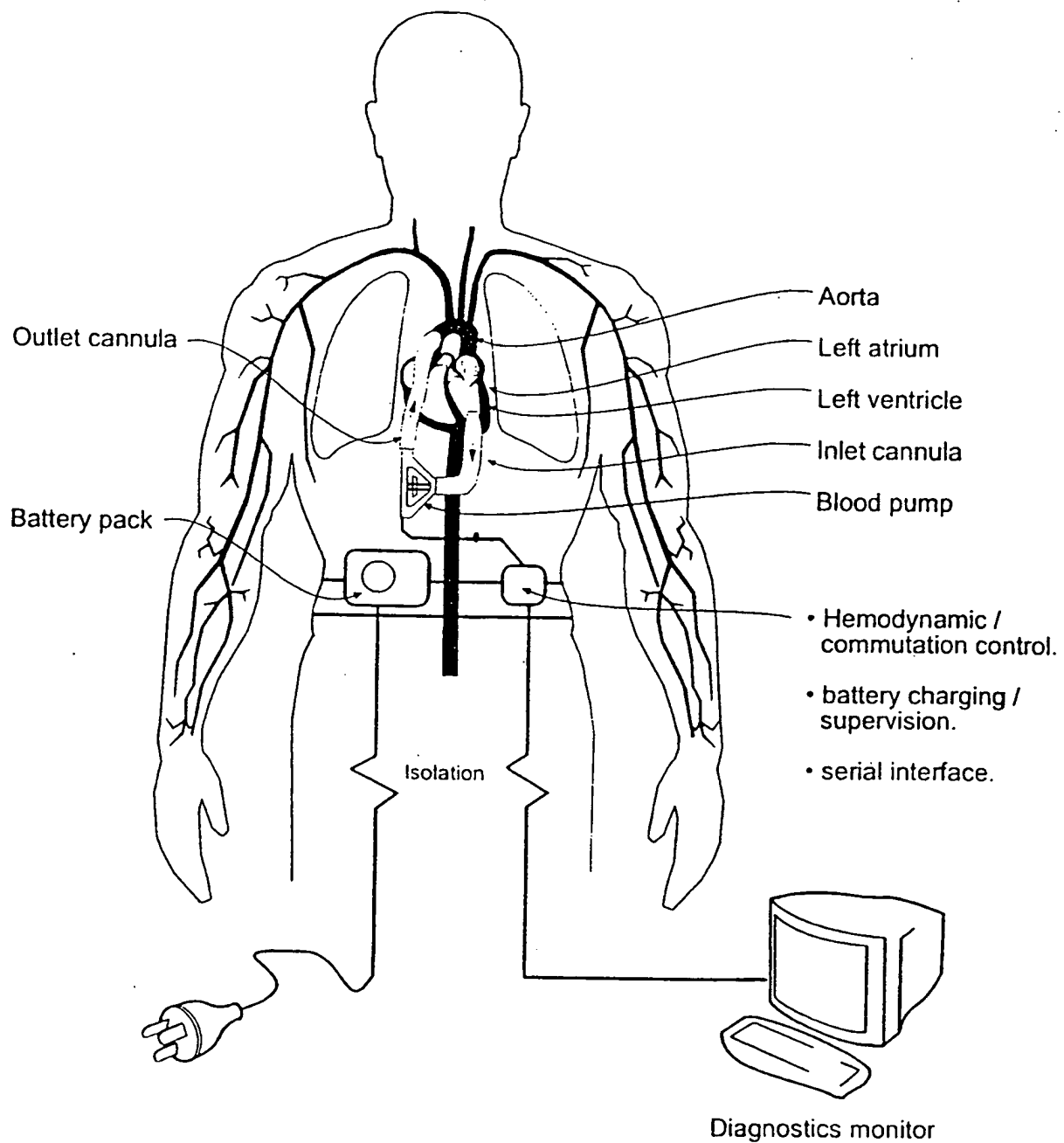
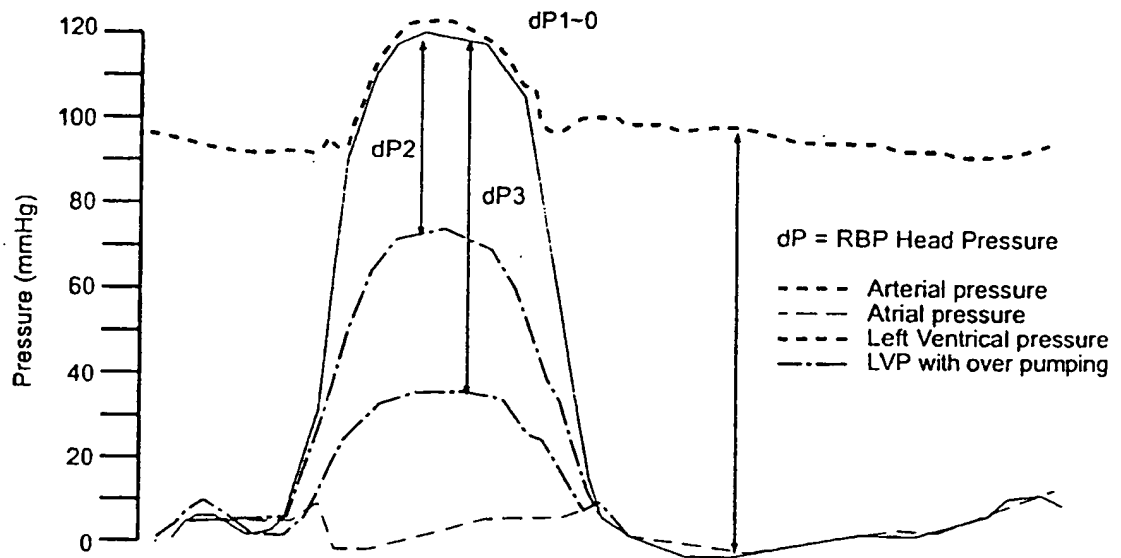


Fig. 36

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Normal cardiac cycle and decreasing LVP with over pumping.

Fig. 37

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Pressure Head Estimate for CB #2 RBP 2.8 #6 Impeller in 42% HCT

$$Z = a + bx + cx^2 + dy + ey^2$$

$$r^2 = 0.99280491$$

$$a = 77.92812$$

$$b = -0.0818024$$

$$c = 4.0719548e-05$$

$$d = 1.6190222$$

$$e = 0.05091337$$

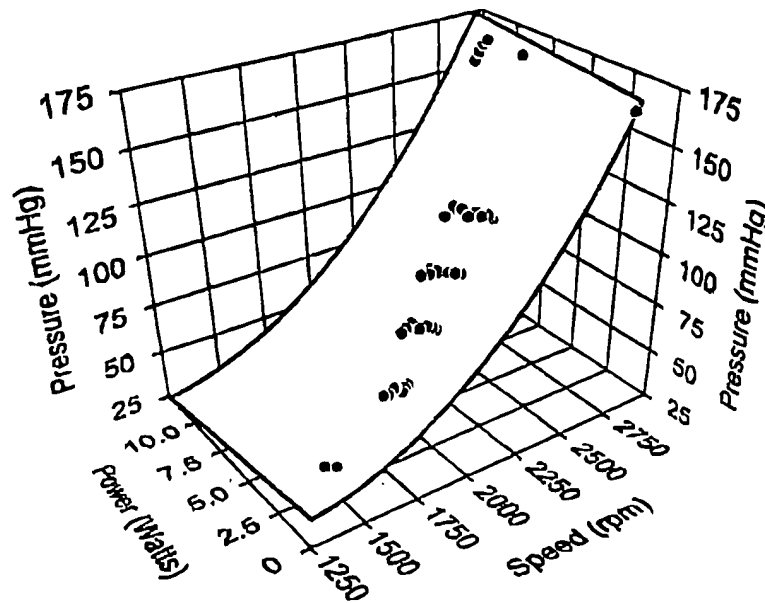


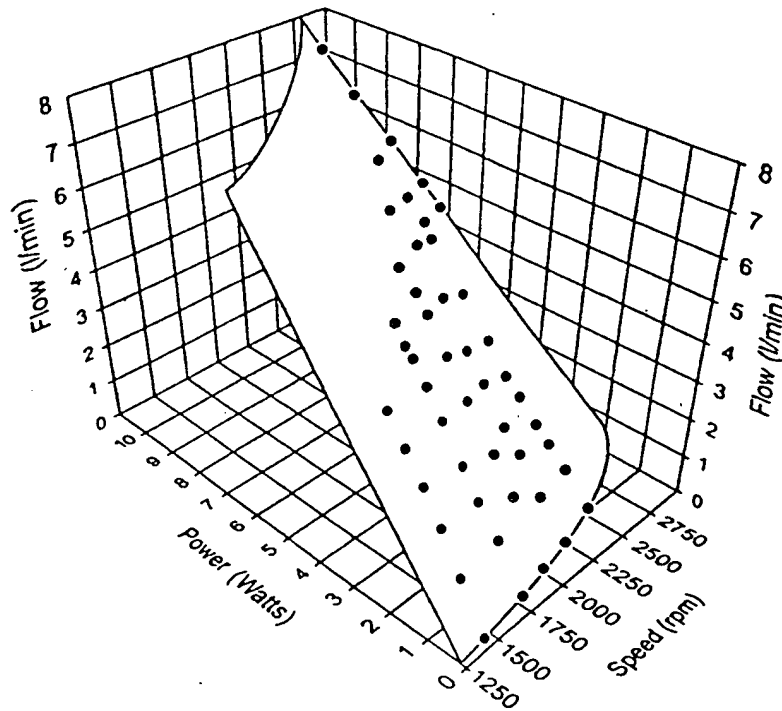
Fig. 38

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Pressure Head Estimate for CB#2 RBP 2.8#6 impeller in 42% HCT

$$z = a + bx + cx^{1.5} + dx^2 + ey + fy^{0.5} \ln y + gy^{0.5}$$

$r^2 = 0.99107652$
 $a = 31.539398$
 $b = -0.27608721$
 $c = 0.0077887314$
 $d = 6.4212762e-05$
 $e = 9.8953353$
 $f = 25.194915$
 $g = 56.85923$



RBP Flow rate estimate as a function of motor speed and input power.

Fig. 39